



# European Construction Sector Observatory

Policy fact sheet

**Luxembourg**

Luxembourg Wood Cluster

Thematic objectives 2, 3, 4 and 5

October 2020



# In a nutshell

Implementing body	Luxinnovation (Luxembourg’s National Agency for Innovation and Research)
Key features & objectives	The Luxembourg Wood Cluster is a membership-based exchange platform for the national wood industry. It provides a range of support services to help its members and the wood industry to collaborate, innovate, compete and grow.
Implementation date	2016
Targeted beneficiaries	Wood industry companies, stakeholders (public and private sector), wood product consumers and wider society.
Targeted sub-sectors	All sub-sectors
Budget (EUR)	Not published
Good practice	★★★★☆
Transferability	★★★★★

The main purpose of the circular economy concept is to redefine economic development by decoupling economic activity from the consumption of finite resources<sup>1</sup>. To achieve that goal, a circular economy aims to maintain the value of products, materials and resources by recycling them through the product lifecycle, to minimise the generation of waste, and to regenerate natural systems<sup>2</sup>.

**Wood and the wood utilisation journey are both well aligned with circular economy logic. Wood is a natural, sustainable and renewable material that can be transformed and utilised in many different ways, and for many purposes and applications. It can also be recycled and repurposed. With sustainable management, forests can also be replenished<sup>3</sup>.**

In December 2015, under the Luxembourg Presidency of the Council of the European Union, the COP 21<sup>4</sup> meeting in Paris reached an historic and legally binding agreement on climate change. As a signatory to that agreement, Luxembourg gave a commitment to contribute EUR 120 million by 2020 to support international climate finance. In the fight against climate change and global warming, wood is a natural asset with an important role to play<sup>5</sup>:

- Forests are carbon sinks that remove carbon from the atmosphere and store it in wood;
- Certain uses of wood (construction) make it possible to lower CO<sub>2</sub> levels in the long term;
- Compared to other materials, the production of wood materials requires much less energy;
- Its use as an energy source makes it possible to reduce the consumption of fossil fuels.

Woods and forests cover 92,000 hectares in Luxembourg, which is just over one third (36%) of the territory. Luxembourg produces 760,000 m<sup>3</sup> of wood per year, two thirds (500,000 m<sup>3</sup>) of which is exploited by humans. Not only is the forest a model of sustainable harvesting, it is also a source of exceptional capital and economic activity that delivers economic, societal and environmental benefits<sup>6</sup>.

According to figures published by Luxinnovation, there were 1,277 companies in Luxembourg in 2018 with activities that are directly or indirectly related to wood. They employ an estimated 19,000 people, a large percentage of which work in the construction sector<sup>7</sup>.

**The Luxembourg Wood Cluster was created in 2016 as an exchange platform for the Luxembourg wood industry. It seeks to bring together and connect all wood producing and processing companies to help them to create new business opportunities, become more competitive and grow the industry. The Wood Cluster has 125 member companies, which is 10% of the whole industry, and 51 strategic partners. Its membership is continuing to grow.**

## 1.

## General description

The Luxembourg Wood Cluster was set up by Luxinnovation, the National Agency for Innovation and Research, in 2016. It brings together all the organisations, both private and public (companies and research centres), that operate within the domestic wood production and processing sector. It provides an exchange platform to enable innovative regional actors to share knowledge and experiences, and to work together to innovate and create new business opportunities.

The Wood Cluster is managed by Luxinnovation and is directed by a Cluster Board that is composed of actors from each of the sub-sectors in the wood industry. The cluster manages a number of working groups that are tasked with assessing and confronting the challenges facing the industry as a whole. The results of that work shape and drive the cluster's strategic objectives and activities<sup>8</sup>.

The Wood Cluster has six strategic objectives<sup>9</sup>:

- Optimise the valuation and marketing of wood resources, in particular by analysing and structuring supply and demand;
- Create and improve regional wood product flows by identifying high added value product flows;
- Support and help diversify the wood processing sector as an essential link in the development of the regional value chain;
- Promote the use of wood in construction, as it is a key growth area for the wood industry, accounting for about 700 companies and just under 7,000 jobs;
- Support education and vocational training, through participation in educational projects or partnerships with foreign university training centres;
- Promote and support product and process innovation, as it is the engine of development.

The Wood Cluster operates five action lines<sup>10</sup>:

### 1. Relationship building and networking

The cluster brings companies, universities and research centres together to build an efficient and competitive innovation ecosystem that facilitates knowledge sharing, collaboration and the rapid progress of projects. Networking activities are conducted on several levels:

- between companies;
- between sub-sectors within the wood sector;
- between public and private actors;
- with other sectors;
- with strategic partners in the Greater Region and Europe;

### 2. Industry knowledge sharing

The cluster provides a range of knowledge support services for the wood industry:

- International technology surveillance;
- Presentation of new products and processes in the Luxembourg market;
- Wood industry profiling (Wood Ecosystem Inventory);
- Identification of circular wood product flows;
- Identification of potential high added value wood product flows;

### 3. Innovation

The cluster helps companies and other actors in the sector to innovate by:

- Providing a research and development strategy for the wood sector;
- Identifying the main actors;
- Identifying and setting up collaborative projects with research centres;

### 4. Promotion and marketing

To help develop and expand markets within the sector, the cluster engages with varied audiences (consumers, industry and policy makers). Promotion and marketing activities include:

- Organisation of thematic forums;
- Participation in trade fairs;

- Publication of thematic articles and media promotion;
- Publication of awareness brochures;

#### **5. Strategic flagship projects**

One of the key priorities of the Wood Cluster is to identify, implement and monitor strategic flagship projects. These are collaborative projects that bring together industry partners to innovate and create new business opportunities for the sector. Resulting from discussions within the thematic working groups of the Cluster,

flagship projects must be innovative, benefit a large number of actors and allow the development of the sector.

As an additional support activity, the Wood Cluster also organises annual visits to companies and projects, both in Luxembourg and abroad. These visits are usually aligned with key topics that are developed within the cluster (e.g. annual Wood Cluster Forum topics).

## 2.

## Achieved or expected results

Since its foundation in 2016, the Luxembourg Wood Cluster has expanded its membership, with a focus on wood industry companies and strategic public and private sector partners. Currently, the Wood Cluster has 125 member companies and 51 strategic partners.

Member companies represent about 10% of the total number of companies whose business activities are directly or indirectly related to the Luxembourg wood industry. This is based on figures published by Luxinnovation in 2018 on the industry as a whole (1,277<sup>11</sup> companies).

Strategic partnerships have been built with a wide range of national and international private and public organisations that have an interest in the success of the wood industry in Luxembourg and the Greater Region. They include public administrations, government agencies, chambers of commerce, industry associations, banks, universities and research centres<sup>12</sup>.

### Relationship building and networking

All member companies and strategic partners are listed on the Wood Cluster website<sup>13</sup> and they are also searchable on the Wood Cluster Catalogue<sup>14</sup> hosted by Luxinnovation. The catalogue classifies those companies that wish to register in the catalogue according to popular keyword descriptions relevant to the wood industry. Examples include the circular economy; timber harvesting; wood industry; local wood; wood construction; sawmill; wood furniture; wood energy; engineering; softwoods; hardwoods; architecture; and consultancy.

The Wood Cluster also runs a 'Meet a Member' service for its members. A visit to a member of the Cluster is organised every two months. During each 'open door' visit, the host company presents its

activities, products and achievements. The visit ends with a networking and discussion session.

In 2018, the Luxembourg Wood Cluster organised Luxembourg's first ever **Wood Cluster Forum**<sup>15</sup>, involving 150 participants from across the wood industry. The Forum featured a series of ten-minute '**local wood pitching sessions**' by Luxembourg companies, as well as talks from the leaders of **external initiatives collaborating with the Wood Cluster**:

- The Forestry and Wood Cluster Initiative<sup>16</sup> (Cluster Forst und Holz in Bayern – Germany);
- The 'Locally Sourced Wood' Initiative (Initiative Holz von Hier – Germany)<sup>17</sup>;
- Technology Institute for Forest Cellulose, Construction Wood and Furniture<sup>18</sup> (l'Institut Technologique Forêt Cellulose Bois-construction Ameublement, FCBA - France);
- InnovaWood<sup>19</sup> (Luxembourg) – an umbrella organisation that integrates four European networks in the forest, wood-based and furniture industries.

Following the Wood Cluster Forum, a bus tour took **50 participants** from all sub-sectors (foresters, sawmills, architects, engineers, builders, etc.), including some potential public and private advocates of the wood industry, to **visit four innovative wood projects**. The tour was designed to provide practical insight into how wood is becoming a material of the future.

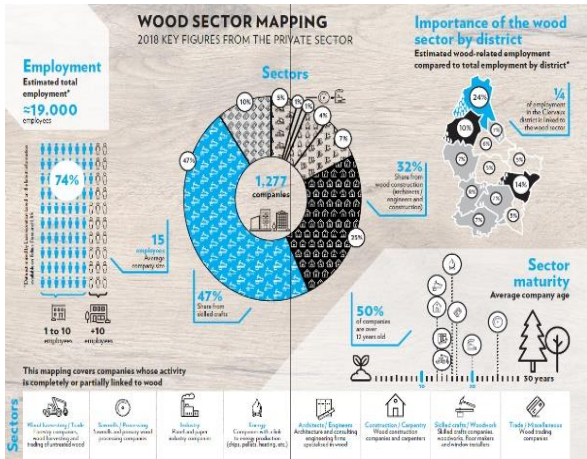
As the manager of the Wood Cluster and in their role as Luxembourg's National Agency for Research and Innovation, Luxinnovation also provides business and financing support services to member companies. Business services include company assessments, partnership building, access to performance improvement programmes and accelerator services. However, an assessment of the extent to which Wood Cluster members have

made use of those services is not currently possible, as no data is published to permit analysis.

**Industry knowledge sharing**

Figure 1 provides a snapshot of the wood sector mapping that was developed in collaboration with Luxinnovation’s market intelligence team.

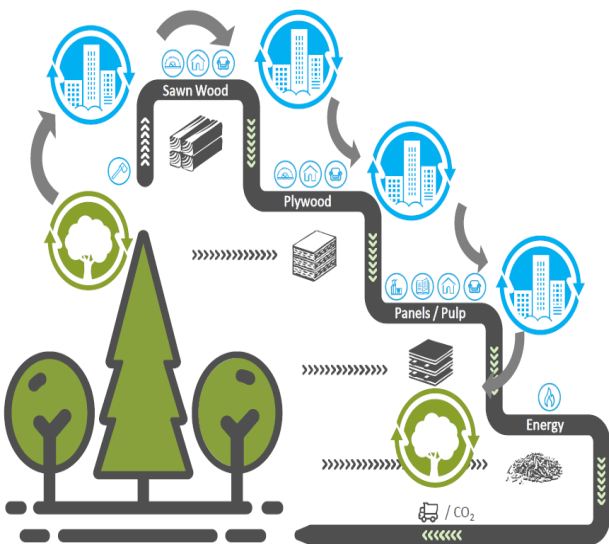
Figure 1: Wood sector mapping



Source: Luxinnovation<sup>20</sup>

Figure 2 provides a snapshot of the diverse types of work done by the Wood Cluster on wood product flows. It shows the wood utilisation journey of production, processing, use and reuse, in tandem with circular economy logic.

Figure 2: Circular wood economy in Luxembourg



Source: Luxinnovation<sup>21</sup>

Other examples of knowledge sharing materials produced by the Wood Cluster include a cluster brochure and regularly published news items and newsletters.

**Innovation and flagship projects/initiatives**

At the end of January 2018, more than 65 people attended **three working groups** organised by the Luxembourg Wood Cluster. Wood Cluster Board members chaired and led each working group. A “bottom-up” approach to information capture and feedback was adopted by each working group to enable them to produce meaningful results for cluster members, in terms of focus and activities.

The working groups focused discussions on three key themes – **wood production, wood construction and wood processing** – to define needs on the ground and to establish an action plan. As part of these discussions, the groups addressed issues such as the quality of wood in the nation’s forests, the valorisation of wood as a regional resource, forest certification, sales methods, transformation processes, and the need for statistics on logging and wood construction<sup>22</sup>.

The **National ‘Controlled Wood’ Risk Analysis Initiative**<sup>23</sup> is one example of how the Wood Cluster’s working group activities have translated into action. The risk analysis work was conducted by a working group composed of representatives of the Forest Stewardship Council (FSC), the Nature and Forestry Administration (NFA), the Luxembourg Wood Cluster and private companies in the wood industry. The initiative was coordinated by the FSC.

**The key result of the National “Controlled Wood” Risk Analysis Initiative is that Luxembourg forest wood has been assessed and certified as “low risk” of being harvested from unacceptable sources. It is therefore recognised as “controlled wood” and can be integrated, in defined proportions, into manufacturing processes<sup>24</sup>.**

Other ongoing flagship projects/initiatives<sup>25</sup> include:

- Implementation of the **Locally Sourced Wood (Holz von Hei) Label**<sup>26</sup> in Luxembourg and the Greater Region, in order to promote the use of local woods;
- Implementation of the **House of Wood (Holzhaff)**, which is a type of regional market for high quality wood/timber.

The Luxembourg Wood Cluster has also co-organised a series of **brainstorming workshops**<sup>27</sup> with 40 companies (SMEs and large

groups), in collaboration with two other clusters: the Luxembourg Materials and Manufacturing Cluster and the Luxembourg ICT Cluster. The workshops serve two objectives. First, to raise awareness in the wood industry about the benefits and opportunities that are possible through digitalisation and Industry 4.0. Second, **to connect developments in the wood sector to Industry 4.0** services and techniques in Luxembourg and the Greater Region.

#### **Promotion and marketing**

The Luxembourg Wood Cluster regularly hosts **stands at relevant trade fairs** to promote the wood industry of Luxembourg and the Greater Region

and **to enable its members to present their products**. In the Ettelbruck Agricultural Fair in 2018, for example, the Wood Cluster stand featured product demos from 12 member companies. Additionally, a movie was shown with over 50 wooden constructions in Luxembourg. The purpose of the stand was to demonstrate the importance of consulting engineers and architects in the development and growth of wood construction in Luxembourg. Over the course of the event, 2,000 attendees visited the stand and 500 direct contacts were made<sup>28</sup>.

## 3.

## Perspectives and lessons learned

### Wood is an ideal material for the circular economy.

Wood is not just a natural material, it is also a sustainable, renewable and environmentally friendly material that can be produced, processed, used and repurposed in a wide variety of sectors and applications. Available in large quantities, wood is easy to produce and requires less energy than many other materials.

The lifetime journey of wood can also involve many different use and repurposing scenarios that make it an ideal material for the circular economy. The Luxembourg Wood Cluster provides an example of how the cascading use principle can apply to wood: “imagine that a timber beam used to construct part of the framework of a roof is then redesigned after this first incarnation into a panel or into paper that is later used in a boiler as fuel”<sup>29</sup>. Minimisation of waste is also an advantage, aided by the use of new technologies.

Combined with sustainable forest management, the wood industry can provide important economic, social and environmental benefits. It is therefore a good fit with circular economy logic.

### The Luxembourg Wood Cluster is helping to drive a renewed interest in wood, especially in construction.

At the heart of the Luxembourg Wood Cluster’s mission and activities is the promotion of the wood industry, its products, developments and innovations.

According to the Administrative Director of Sawmill Bois Brever<sup>30</sup>, these activities are bearing fruit. The Wood Cluster and its members are now witnessing a renewed interest in wood as a versatile, renewable, economically viable and ecologically sound material. It is an ideal material, for example, in green buildings.

### The Luxembourg Wood Cluster enables the development of joint solutions to common challenges.

According to the Administrative Director of Sawmill Bois Brever<sup>31</sup>, “many companies face the same challenges as we do, and I think it is easier to find solutions if we work together”. This was the main incentive behind the company’s decision to join the Wood Cluster. Prior to joining, Bois Brever was experiencing decreasing demand for its traditionally produced construction wood products.

By investing in new machinery and by becoming a proactive member of the Wood Cluster, the company is now confident about the future of its business and the Luxembourg wood industry. New machinery has enabled the company to produce CE certified construction wood products, be more adaptable to customer needs and reduce waste. Membership of the Wood Cluster is enabling the company to work collectively with the Luxembourg wood industry to find solutions to two common challenges that require common solutions: access to raw material and qualified staff<sup>32</sup>.

Sourcing local raw material is a particularly important goal that will provide several benefits<sup>33</sup>:

- More resilient/sustainable supply of a renewable material;
- Reduced environmental footprint by reducing the need to transport raw material from abroad (approximately 75% is normally sourced from Belgium);
- Added value to the national circular economy;
- Greater brand value;
- Increased business opportunities for the national wood industry.

Networking between cluster members is an additional benefit, according to the Administrative Director of Bois Brever<sup>34</sup>. First, it enables companies such as Bois Brever to gain recognition



in the industry. Second, it enables members of this small industry to work together to develop solutions, new opportunities and sectoral growth.

**The Luxembourg Wood Cluster is helping to create new opportunities for regional value creation and retention.**

According to the Manager of the Luxembourg Wood Cluster<sup>35</sup>, the forest and wood sector is facing some important challenges that have been exacerbated by the recent COVID-19 health crisis. Climate change is having an increasingly adverse effect on Luxembourg's forests, and by extension, on wood production. Frequent dry summers and an increase in insect populations are contributing to a decline in the main species of tree used for wood production in Luxembourg (spruce and beech). This is both a local resource challenge and a challenge to industry value chains that depend on wood products. In addition, the COVID-19 health crisis has highlighted the importance of local and regional value and supply chains. Finding local and regional solutions to these challenges and creating regional value from wood are at the core of work

being carried out by the Luxembourg Wood Cluster.

**The Luxembourg Wood Cluster is helping member companies to learn about and prepare for Industry 4.0.**

In collaboration with two other clusters (the Luxembourg Materials and Manufacturing Cluster and the Luxembourg ICT Cluster), the Luxembourg Wood Cluster has co-organised a series of brainstorming sessions with companies to discuss the benefits of digitalisation and Industry 4.0, and the potential opportunities they offer.

Feedback from the participants indicates that there is ample scope for the adoption of digitalisation in regional industries and value chains. However, support is needed to raise awareness of the importance and value of digitalisation, to provide training and to facilitate the sharing of knowledge and best practices. The Luxembourg Wood Cluster therefore has a pivotal role to play in the digitalisation of the wood industry<sup>36</sup>.

## 4.

## Conclusion and recommendations

**The Luxembourg Wood Cluster is a successful development initiative that is increasingly gaining traction in the wood industry and is continuing to grow. In the four years since its launch, the Wood Cluster has succeeded in expanding its membership to include 125 member companies and 51 strategic partnerships. Its membership now features about 10% of the total number of companies operating in the sector (1,277), according to the wood sector mapping exercise published by the Wood Cluster. The cluster is also collaborating with external initiatives.**

One of the key results achieved to date includes the establishment of Wood Cluster working groups to explore and address important topics relevant to the wood industry and its members. They are continuing to define priorities and strategies for the industry, based on the needs of Wood Cluster members and the industry as a whole.

The results of these working groups are being translated into action through flagship projects. These projects are designed to support the growth and sustainability of the wood industry in Luxembourg and the Greater Region. In particular, they are helping to develop regional value chains and new opportunities based on circular economy principles.

Developed in collaboration with public and private sector organisations, the National “Controlled Wood” Risk Analysis Initiative is an example of a flagship project that has resulted in Luxembourg forests being certified as an acceptable source of wood for manufacturing processes. Other ongoing projects are also helping to make the Luxembourg wood industry more competitive at home and abroad. A ‘locally sourced wood’ label is being introduced to promote the use of local resources and the House of Wood initiative is being implemented to provide a regional marketplace for high quality wood/timber.

The Wood Cluster is succeeding in its quest to generate a renewed interest in wood as a viable, versatile, sustainable and ecologically sound material for use in manufacturing processes and in many different application areas. By working together, the cluster members are pooling their knowledge, experience and resources to develop joint solutions to common challenges. This collective effort is supporting the development of regional value chains and the creation of new opportunities and value for the wood industry.

Looking forward, two recommendations are suggested to help improve the impact of the Luxembourg Wood Cluster:

- In order to help incentivise greater numbers of wood sector companies to join the Wood Cluster, it is recommended to increase its membership and become more representative of its sector, improve and/or add sectoral engagement and organise promotional activities;
- A stronger focus should be placed on the Industry 4.0 challenge, in terms of its relevance and importance to the wood industry and the opportunities it offers. Consideration should be given to ramping up awareness raising activities across the industry to engage with all companies, to get the message across and to support the transformation of the industry.

**Overall, the Luxembourg Wood Cluster is rated as a ‘4-star good practice measure’ on a scale of 1 (low) to 5 (high).**

This score is based on the success that the Luxembourg Wood Cluster has achieved to date. It has brought many stakeholders together to collectively develop and improve the sector, raising its profile in the process. Of particular importance is the ongoing work to develop regional value chains using regional resources, as well as the establishment of quality standards across the wood

sector. A higher good practice score would be conditioned on the cluster increasing its membership to include a majority of wood sector companies.

**The Luxembourg Wood Cluster is rated as a '5-star transferable measure' on a scale of 1 (low) to 5 (high).**

Cluster initiatives are quite common across many countries, which implies that the concept is easily

transferable. There are also many and varied cluster initiatives across the EU that have a direct or indirect focus on wood. The key to developing a successful cluster is to adopt a 'bottom-up' approach to collaboration, challenges and solutions.

# Endnotes

- 1 Ellen MacArthur Foundation, Circular economy concept:  
<https://www.ellenmacarthurfoundation.org/circular-economy/concept>
- 2 Eurostat, Circular economy – overview:  
<https://ec.europa.eu/eurostat/web/circular-economy>
- 3 Luxinnovation, The Wood Cluster, serving Luxembourg’s wood sector:  
<https://www.luxinnovation.lu/wp-content/uploads/2017/04/Wood-Cluster.pdf>
- 4 United Nations Climate Change, COP 21:  
<https://unfccc.int/process-and-meetings/conferences/past-conferences/paris-climate-change-conference-november-2015/cop-21>
- 5 Luxembourg Wood Cluster, Wood – Material of the Future (Le Bois – Un Matériau D’Avenir):  
[https://www.luxinnovation.lu/wp-content/uploads/2018/11/lxi\\_brochure-wood-cluster\\_final.pdf](https://www.luxinnovation.lu/wp-content/uploads/2018/11/lxi_brochure-wood-cluster_final.pdf)
- 6 Ibid
- 7 Luxinnovation, Wood Sector Mapping, 2018:  
[https://www.luxinnovation.lu/global/wp-content/uploads/sites/3/2019/05/wood-mapping-2018\\_en.pdf](https://www.luxinnovation.lu/global/wp-content/uploads/sites/3/2019/05/wood-mapping-2018_en.pdf)
- 8 Luxembourg Wood Cluster, Wood – Material of the Future (Le Bois – Un Matériau D’Avenir):  
[https://www.luxinnovation.lu/wp-content/uploads/2018/11/lxi\\_brochure-wood-cluster\\_final.pdf](https://www.luxinnovation.lu/wp-content/uploads/2018/11/lxi_brochure-wood-cluster_final.pdf)
- 9 Luxinnovation, Luxembourg Wood Cluster, Le Cluster bois se dévoile à ses membres, 2017:  
<https://www.luxinnovation.lu/wp-content/uploads/sites/3/2017/09/le-cluster-bois-se-devoile-a-ses-membres.pdf>
- 10 Luxembourg Wood Cluster, Wood – Material of the Future (Le Bois – Un Matériau D’Avenir):  
[https://www.luxinnovation.lu/wp-content/uploads/2018/11/lxi\\_brochure-wood-cluster\\_final.pdf](https://www.luxinnovation.lu/wp-content/uploads/2018/11/lxi_brochure-wood-cluster_final.pdf)
- 11 Luxinnovation, Wood Sector Mapping, 2018:  
[https://www.luxinnovation.lu/global/wp-content/uploads/sites/3/2019/05/wood-mapping-2018\\_en.pdf](https://www.luxinnovation.lu/global/wp-content/uploads/sites/3/2019/05/wood-mapping-2018_en.pdf)
- 12 Luxinnovation, Luxembourg Wood Cluster, Organisations:  
<https://www.luxinnovation.lu/cluster/luxembourg-wood-cluster/#organisations>
- 13 Ibid
- 14 Luxinnovation, Wood Cluster Catalogue:  
<https://clustercatalogue.luxinnovation.lu/wood/>
- 15 Luxinnovation, Wood Cluster Forum: a successful premiere, 2018:  
<https://www.luxinnovation.lu/news/wood-cluster-forum-successful-premiere/>
- 16 Forestry and Wood Cluster Initiative (Cluster Forst und Holz in Bayern GmbH):  
<https://www.cluster-forstholzbayern.de>
- 17 German ‘Locally Sourced Wood’ (Holz von Hier) Initiative:  
<https://www.holz-von-hier.eu/>
- 18 Technology Institute for Forest Cellulose, Construction Wood and Furniture (l’Institut Technologique Forêt Cellulose Bois-construction Ameublement, FCBA - France):  
<https://www.fcba.fr/content/presentation-fcba>
- 19 InnovaWood – an umbrella organisation that integrates four European networks in the Forest, Wood-based and Furniture industries into a more effective mechanism to support innovation in these sectors:  
<http://www.innovawood.com/>
- 20 Luxinnovation, Wood Sector Mapping, 2018:  
[https://www.luxinnovation.lu/global/wp-content/uploads/sites/3/2019/05/wood-mapping-2018\\_en.pdf](https://www.luxinnovation.lu/global/wp-content/uploads/sites/3/2019/05/wood-mapping-2018_en.pdf)
- 21 Luxinnovation, Wood Cluster presentation, 2017:  
[https://www.luxinnovation.lu/wp-content/uploads/2017/08/Wood\\_Cluster\\_presentation.pdf](https://www.luxinnovation.lu/wp-content/uploads/2017/08/Wood_Cluster_presentation.pdf)
- 22 Luxinnovation, News, The indus-“tree”-ous Luxembourg Wood, 2018:  
<https://www.luxinnovation.lu/news/indus-tree-ous-luxembourg-wood-cluster/>
- 23 Luxembourg Forest Stewardship Council (FSC), Actualites, L’analyse nationale de risque pour le bois contrôlé d’origine luxembourgeoise maintenant disponible, 2019:  
<https://lu.fsc.org/fr-lu/actualites/id/29>

- 24 Luxembourg Trade and Invest, News, Forest Stewardship Council approves Luxembourg wood, 2019:  
<https://www.tradeandinvest.lu/news/forest-stewardship-council-approves-luxembourg-wood/>
- 25 Luxinnovation, News, Wood: following promotion, comes action, 2018:  
<https://www.luxinnovation.lu/news/wood-following-promotion-comes-action/>
- 26 Luxembourg Locally Sourced Wood (Holz vun Hei) Label – developed by the LEADER project:  
<https://www.naturpark-mellerdall.lu/en/projects/leader-projekt-holz-vun-hei/>
- 27 Luxinnovation, News, Industry 4.0: wood also has a part to play, 2018:  
<https://www.luxinnovation.lu/news/industry-4-0-wood-also-has-a-part-to-play/>
- 28 Luxinnovation, News, Wood: following promotion, comes action, 2018:  
<https://www.luxinnovation.lu/news/wood-following-promotion-comes-action/>
- Luxinnovation, News, Wood takes pride of place at the Ettelbruck Agricultural Fair, 2018:  
<https://www.luxinnovation.lu/news/wood-takes-pride-of-place-at-the-ettelbruck-agricultural-fair/>
- Luxinnovation, News, Wood Cluster participates at Ettelbruck Agricultural Fair, 2018:  
<https://www.luxinnovation.lu/news/wood-cluster-participates-at-ettelbruck-agricultural-fair/>
- 29 Luxinnovation, The Wood Cluster, serving Luxembourg’s wood sector:  
<https://www.luxinnovation.lu/wp-content/uploads/2017/04/Wood-Cluster.pdf>
- 30 Luxembourg Chamber of Commerce, Merkur, Cover Story – Clusters, 2018:  
[https://www.cc.lu/uploads/media/Cover\\_Story\\_-\\_Clusters.pdf](https://www.cc.lu/uploads/media/Cover_Story_-_Clusters.pdf)
- 31 Luxinnovation, News, Investing in the Future, 2018:  
<https://www.luxinnovation.lu/news/investing-in-the-future/>
- 32 Ibid
- 33 Ibid
- 34 Ibid
- 35 Luxinnovation, News, Making the economy more circular with wood, 2020:  
<https://www.luxinnovation.lu/news/making-the-economy-more-circular-with-wood/>
- 36 Luxinnovation, News, Industry 4.0: wood also has a part to play, 2018:  
<https://www.luxinnovation.lu/news/industry-4-0-wood-also-has-a-part-to-play/>